

**NROC WEBINAR SERIES | Aquaculture in New England Federal Waters:
Regulation, Public Engagement, and Interjurisdictional Coordination**

The Northeast Regional Ocean Council (NROC)'s Ocean Planning Committee hosted a webinar series about the regulatory process, public engagement, and interjurisdictional coordination for aquaculture in New England federal waters. This series built on NROC's 2020 webinar which highlighted federal efforts to designate Aquaculture Opportunity Areas in the United States, as well as NROC's recent development of a draft set of "Best Practices for Ocean Permitting and Management Processes." The objectives of this webinar series were to provide a better understanding of the federal agency review and authorization process for aquaculture in federal waters, provide opportunities for participant inquiries and feedback about the process, and to obtain input from different sectors and interest groups.

WEBINAR 1 | April 5, 2022

Federal Agency Review and Authorization of Aquaculture in New England Federal Waters

The purpose of the first webinar was to provide an overview of the federal review and authorization process for aquaculture projects in New England federal waters and address questions from the audience. Presentations and discussion focused on the state of aquaculture in New England, the federal process to identify Aquaculture Opportunity Areas, case studies of aquaculture permitting from other regions, the federal agency review and authorization process for aquaculture in New England federal waters, enforcement, and ecological, climate and environmental justice considerations.

Overview of Presentations

- **NROC OPC Co-Chair Lou Chiarella, NOAA Fisheries and NROC Executive Director Nick Napoli** provided an overview of the webinar series and highlighted its role in support of the NROC Ocean Planning Committee's goal - to provide a forum, data and information, best practices, and opportunities to coordinate offshore planning, regulatory, and siting activities to improve ocean and coastal ecosystem health, enhance decision making, and ensure compatibility among human activities.

Presentation is available at: https://neoplan.org/wp-content/uploads/2022/04/1.OPC_AquaWebinar_Intro_4-5-22.pdf

- **Chris Schillaci, Regional Aquaculture Coordinator, Greater Atlantic Regional Fisheries Office (GARFO), NOAA Fisheries** provided an overview of the status of aquaculture in U.S. federal waters and NOAA's NEPA role for aquaculture projects in federal waters. Chris' presentation included: 1) review of federal permit / authorization requirements, 2) overview of federal consultation and review requirements, 3) overview and timeline for identification of Aquaculture Opportunity Areas, 4) overview about the status of federal waters aquaculture projects, and 5) review of Pacific Ocean Aquafarms as a case study for understanding the permitting and NEPA process. Resources highlighted during the presentation included:

- [Executive Order 13921. Promoting American Seafood Competitiveness and Economic Growth \(May 7, 2020\).](#)
- [Guide to Federal Aquaculture Grant and Financial Assistance Resources 2021](#)
- [Guide to Permitting Marine Aquaculture in the United States \(2022\)](#)

Presentation is available at: <https://neoplan.org/wp-content/uploads/2022/04/2.Schillaci-webinar-NROC.pdf>

- **Christine Jacek, Senior Project Manager, US Army Corps of Engineers (USACE)** provided an overview of the USACE Regulatory Program. Christine provided overview of 1) USACE permit authorities (Section 10, Section 404, Section 103, Section 408), 2) description of the regional general permit and individual permit processes, 3) key elements of a permit application, and 4)

recommended best practices for permitting. Resources highlighted during the presentation included:

- [USACE New England District - Regulatory](#)
- [USACE New England District - Regional General Permits](#)
- [USACE New England District - Mitigation Guidance](#)
- [USACE New England District - Documents, Forms, and Guidance](#)
- [Section 408 Resources](#)

Presentation is available at: https://neoplaning.org/wp-content/uploads/2022/04/3.Jacek_NROCAquacultureUSACEPresentation.pdf

- **Eric Nelson, Biologist, Ocean and Coastal Protection Section, US Environmental Protection Agency (EPA)** provided an overview of the EPA's role in regulating aquaculture in New England federal waters. Eric provided an overview of the following two Clean Water Act provisions applicable to federal waters aquaculture: 1) Section 402 - National Pollutant Discharge Elimination System (NPDES), and 2) Section 403 - Ocean Discharge Criteria. Eric also provided an overview of the NPDES permitting process and federal action consultation and reviews for aquaculture projects in federal waters. Resources highlighted during the presentation included:

- [Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category](#)
- [Aquaculture NPDES Permitting](#)

Presentation is available at: https://neoplaning.org/wp-content/uploads/2022/04/4.Nelson_EPA_R1_Reg-Offshore-Aq-in-Fed-Waters_28Mar22_FINAL.pdf

Highlights from Q&A Segment

Will the Aquaculture Opportunity Area process address sources of toxic contaminants in ocean water/sediments that pose threats to consumption of finish/shellfish from aquaculture systems that pose health threats to sensitive populations?

NOAA is currently developing the scope for what will be included in the Environmental Impact Statement (EIS) for Aquaculture Opportunity Areas. The U.S. Food and Drug Administration and NOAA Seafood Inspection Program have provisions in place to evaluate and ensure the sanitation of molluscan shellfish cultured and harvested from federal waters under the National Shellfish Sanitation Program.

What happens after the five-year permit timeframe? Does the farm need permit renewal or does it need to cease operation?

USACE authorizations for regional general permits and individual permits authorize a five-year construction period. Once the facility is up and running, it can operate in perpetuity in the manner originally authorized. If modifications are made or operations cease, the operator would be required to remove all structures or contact USACE to transfer operations. EPA also has a five-year permit. Once the five years expire, the operator is required to resubmit for a new permit. As long as the new permit application is submitted on time, the current permit can be extended until the new permit is released.

How do USACE, EPA, and NOAA coordinate on enforcement of permit conditions? Once a project is permitted through the federal process, which agency or agencies oversees or enforces the provisions in the permits?

While there are opportunities for agency coordination / cooperation for site visits to streamline logistics, each agency has their own process for permit oversight and enforcement. NMFS focuses on reporting requirements related to consultations, and the NOAA Seafood Inspection Program has a role in auditing requirements in contracts between federal waters molluscan shellfish aquaculture operations and

Seafood Inspection Program. EPA has their own enforcement and compliance program. USACE enforces special conditions associated with their authorizations.

What agency would be the lead for future inspections to ensure that the operation is working as planned or monitoring the discharge to make sure it is within the predicted parameters?

Before permitting and construction, NOAA and EPA develop dispersion models to assess how the project will impact the benthic environment and water quality to inform the EPA NPDES discharge permit. EPA then oversees the monitoring process to ensure discharge is within the approved parameters.

At what point does the Section 7 Endangered Species Act (ESA) consultation with U.S. Fish and Wildlife Service (FWS) occur?

EPA looks for species present under the purview of FWS. If the location of a project indicates potential for these species to be present then EPA engages with FWS early in the process. USACE initiates consultation with FWS in conjunction with their permitting process. Consultations are conducted separate from the NEPA process but much of the information that would go into a biological assessment would be included in an EIS. There's a formal Section 7 consultation and technical assistance process but agencies also work together informally through early engagement to ensure that the EIS incorporates appropriate information about protected species.

FWS encourages early coordination so that unexpected impacts aren't identified late in the process. FWS is developing determination keys for listed species in the region and consultation package builders in their Information for Planning and Consultation system that deconstructs all parts of aquaculture projects and potential impacts to listed species.

Does the EIS satisfy the Section 7 ESA biological assessment? The goal is to gather all appropriate information about protecting endangered species through the EIS process and include it in the agencies' Section 7 biological assessments. However, the changes in a species' status or consideration of other new information not included in the EIS may require the permitting agencies to update their biological assessments.

Does the Executive Order apply to a project that involves a USACE permit and a state's Department of Natural Resource discharge permit? Would NOAA be the lead agency for NEPA on that?

The EO only applies to aquaculture projects in federal waters that require two or more federal agency authorizations and an EIS.

For New England offshore aquaculture, where would the draft EIS be posted for public review? Are there any current or imminent draft EIS consultations in this region?

Public notices are posted via the federal register per legal requirements. In order to advance best practices to increase public awareness about the notices, NOAA and other agencies are utilizing additional communication methods to circulate notices to a broader audience. NROC is using the Northeast Ocean Data Portal to provide mapping and links to permit documents for aquaculture projects in federal waters.

Can other federal agencies request a specific NOAA science/technical review of a specific proposed aquaculture project?

NEPA has provisions that allow lead agencies to engage with other federal agencies as "cooperating" or "participating" agencies to support project evaluation. This also happens with respect to specific areas of project permitting during the consultations.

How is climate change factored into the process for reviewing aquaculture projects?

Climate change is a priority for the Biden Administration and is an important part of the NEPA review process. NOAA has to evaluate potential impact of projects in today's climate and consider the suitability of aquaculture operations for their ability to withstand anticipated impacts from increasingly intense storms. Future climate scenarios are factored into project review as far as structural integrity and suitability of the gear and operations. EPA considers the impact of climate change for reviewing aquaculture relative to increasing ocean acidification and suitability for certain aquaculture species to thrive in changing temperatures. For USACE, climate change is generally outside the scope for their regulatory review of aquaculture projects.

Will AOA development and aquaculture initiatives be incorporated into BOEM's offshore wind siting in Gulf of Maine? How will these two priorities be balanced?

Currently, NOAA has not stated the intention to develop an AOA in the Gulf of Maine. NOAA has worked with BOEM and other agencies in the Gulf of Mexico and other regions to ensure that there is regular communication across project types to help achieve permitting efficiency. Focus of AOAs is currently on developing programmatic environmental impact statements. AOA placement will be based on stakeholder input and collaboration among agencies to support the goal of sustainable seafood production. NOAA coordinates with BOEM to avoid planning conflicts.

How will environmental justice will be considered during the review process?

The NEPA and NPDES permitting process evaluate aquaculture projects to identify and minimize any potential impacts to environmental justice areas. This is also a priority for NOAA and an important part of the NEPA analysis for both offshore and nearshore or landside aspects of aquaculture projects. USACE has also prioritized environmental justice in their permitting review.

Where would potential environmental challenges associated with offshore aquaculture, such as fish escapes/interbreeding or spread of invasive biofouling species, be addressed in the permit process?

The NEPA review process seeks to identify and address these issues. EPA considers potential for escapements and other related concerns within the NPDES / Ocean Discharge Criteria review, especially for potential impacts on federally listed endangered species such as Atlantic salmon. Suitability and safeguards for the site will be required to minimize negative impacts and maintain integrity during storms. Monitoring may be required to assess potential for spread of invasive species. If the project involves a managed species, then the New England Fisheries Management Council is responsible for making sure the operation is consistent with fisheries management plans. USACE considers these concerns within their review of cumulative impacts which analyzes primary and secondary effects from the project. The public interest section also encompasses concerns not addressed elsewhere.

How does USACE define a "minimum impact" project? Is there a certain size or other standard used to determine whether a project will have a "minimum impact"?

A minimum impact determination is project specific. USACE uses more than project size to determine if a project is defined as having minimum impact. Additional factors such as conflicts with other users, proposed gear, cumulative effects, etc. may cause a project to be defined as having more than a minimum impact.

Links to all presentations and a recording of Webinar 1 are available at:
<https://neoceanplanning.org/planning-issues/aquaculture/>

WEBINAR 2 | April 8, 2022

State, Tribal, and Public Perspectives on Improving the Regulatory Process for Aquaculture in New England Federal Waters

This purpose of this webinar was to highlight state, tribal, and public perspectives on opportunities to improve the federal regulatory review process and better engage different interests in aquaculture permitting decisions for projects in New England federal waters. NROC OPC Co-Chair Ted Diers, New Hampshire Department of Environmental Services, and Chris Schillaci, NOAA Fisheries, provided an overview of the webinar agenda and key points from the first webinar in the series. Panel members representing state agencies, New England Fisheries Management Council, aquaculture industry, fishing industry, and environmental organizations were asked to provide their perspectives regarding the following questions:

- How can your interests best be addressed and incorporated into the regulatory permitting process? What is the best method and timing for engaging your group during the permitting process?
- Please provide recommendations about how to improve the process described by the federal agencies in the first webinar.
- What are potential next steps to better understand or improve the regulatory process – workshops/work group, topics to focus on in a workshop or work group, etc.?

The following panelists participated in the webinar: Tom Nies, New England Fisheries Management Council; Lisa Engler, Massachusetts Office of Coastal Zone Management; Chris Williams, New Hampshire Department of Environmental Services; Amanda Ellis, Maine Department of Marine Resources; Sebastian Belle, Maine Aquaculture Association; Ted Maney, Salem State University; Paul Zajicek, National Aquaculture Association; Beth Casoni, Massachusetts Lobstermen's Association; Robert Jones, The Nature Conservancy; and Priscilla Brooks, Conservation Law Foundation.

A link to the introductory presentation and a recording of Webinar 2 are available at:

<https://neoplan.org/planning-issues/aquaculture/>

Highlights and takeaways from the panel discussions during Webinar 2 are provided below.

Common Themes / Takeaways

- NEPA provides an overarching review framework for the offshore aquaculture permitting process that seeks to ensure federal permitting agencies consider the significant environmental consequences of a proposed action, and inform and involve the public in their decision making.
- The Gulf of Maine can be a challenging environment for aquaculture development compared to other areas around the world (regulatory hurdles, environmental conditions, competing uses, and rapidly changing conditions).
- There are opportunities to improve the permitting framework by applying best practices to enhance communications, improve data QA/QC sharing, provide the public with access to resources and permits, make for a more efficient process, and ensure engagement among industry, tribes, environmental organizations, and other stakeholders.
- Additional training and resources are needed to ensure that all interested parties understand the permitting and public review process.
- Aquaculture development, siting, review, and permitting must be considered in the context of ecosystem functions and services.

- Communication should take place early (before formal process), often, across federal and state agencies, among states, and with all stakeholders to identify concerns early in the process and minimize conflicts.
- Maine's approach seeks to resolve real and perceived user conflicts by balancing interests of the applicant, public trust, and environmental protection.
- Understanding the impact of aquaculture on existing uses is a priority.
- Investments are needed to increase capacity for state and federal agencies charged with regulating and monitoring aquaculture projects, and to improve and update datasets.
- Monitoring is critical for understanding baseline conditions, impact during operations, and long-term effects on natural resources.
- NROC is in a unique position to convene industry, government and other stakeholders around best practices and learning opportunities related to offshore aquaculture.
- Northeast Ocean Data Portal is an important tool for characterizing resources, and highlighting aquaculture projects during siting, permitting and review. Updates / additions are needed.

New England Fisheries Management Council (NEFMC) Perspective

- NEFMC focuses on Magnuson-Stevens Act (MSA) and managed species, protecting Essential Fish Habitat, and interactions with fisheries they manage.
- Clear communications among agencies, applicants and NEFMC that happen early and often are essential as the NEFMC process for managed species can take at least a year.
- NEFMC's Aquaculture policy and other aquaculture resources are available on the website:
 - [NEFMC Aquaculture Policy](#) (includes best practices: 1) siting and design in context of ecosystem functions and services, 2) operations should minimize environmental impact, 3) development should consider impact of multiple aquaculture sites on ecosystem, 4) aquaculture operators should contribute to coastal community, 5) aquaculture should consider context of other sectors, and 6) clear and ongoing communication between all parties is important)
 - [Aquaculture Coordination Plan](#) (includes three elements – engaging in conversations on specific projects, engaging in regional scale conversations, and developing more expertise to improve their review)

State Agency Perspectives (ME, NH, and MA)

- Aquaculture projects should be reviewed for their impact on regional ecosystems such as the unique Gulf of Maine system with its shared habitat, species, multiple maritime uses, and geopolitics (US / Canada).
 - Applicants throughout the region should be required to engage with federal agencies and all three Gulf of Maine states.
 - Federal consistency review should be considered for aquaculture projects regardless of home port.
 - Existing uses and co-location should be considered within the review process.
- Agencies should take advantage of Northeast Ocean Data Portal:
 - Utilize extensive Gulf of Maine data available to characterize resources and uses.
 - Highlight aquaculture projects during the planning, siting, and permitting process.
- Additional research is needed to support aquaculture in the Gulf of Maine.
 - EPA and NPDES should require monitoring to understand water quality impacts.
 - Research is needed to understand co-location and co-use of resources.
 - Enhanced data is needed to inform siting and provide detail about fishing footprint.

- Opportunities to engage with permitting agencies early in the process (ahead of submitting application) are critical for reducing conflict.
 - States should receive direct notice of pre-application meetings and opportunities to participate so they can identify concerns as early as possible and share information with federal agencies and applicants. Provides state with opportunity to assess proposal and identify concerns related to monitoring for biotoxin and shellfish sanitation.
 - Informal communications among states, across state and federal agencies, and with NEFMC are important for identifying shared concerns and connecting with fisheries / habitat engagement groups.
 - Communication and coordination across agencies and stakeholders must continue throughout the planning, siting and permitting process.
- Applicants should be required to plan and provide information about necessary onshore components (moorings, hatcheries, constructing pens, vessels, etc.) needed to support offshore aquaculture as part of their project proposal.
- Maine's aquaculture review and permitting process accounts for variety of perspectives and multiple users to focus on safeguarding aquatic and public health. Other states are invited.
- Federal agencies should develop targeted outreach materials and provide training for states and municipalities (e.g., information about where to find comment periods, what to include in comments, how and when to engage in process, and what tools are available to understand the proposed project).

Coordination with Tribes

- NOAA is required to consult, coordinate, and engage with tribes through NEPA and in the 2020 Executive Order: [Promoting American Seafood Competitiveness and Economic Growth](#). Coordination with tribes also reflects agency best practices.
- NEFMC relies on NOAA for tribal coordination as they do not have a legislatively-designated tribal representative. Meetings are open to public and tribes are encouraged to attend.
- Maine conducts a robust public notification and engagement process that encompasses outreach to tribes and other stakeholders.
- Massachusetts provides public notice through the federal consistency review process to all stakeholders and encourages engagement with tribes. Board of Underwater Archaeological Resources staff at CZM also engages with tribes.
- NROC has prioritized increasing communication and coordination with tribal partners over the next year in order to build capacity for tribes to participate.

Aquaculture Industry Perspectives

- Gulf of Maine has a relatively hostile aquaculture permitting framework compared to other locations around the world. Aquaculture investors factor this into decision making.
- Given need for sustainable food supply, streamlined regulation should encourage aquaculture production in the US.
- Maine's stream-lined, 'one-stop-shop' approach is an excellent model. Maine's leasing and environmental protection processes balance interests of applicant, public trust, environment, and focus on resolving real or perceived user conflicts.
- MSA is not helpful or well-suited to assess aquaculture. Industry believes aquaculture should be exempt because it differs from management of wild fisheries. NEFMC and fisheries agencies have other opportunities to review and provide input during aquaculture permitting.
- Monitoring should be streamlined to focus on specific priorities.

- Permit applicants should have more direct involvement in Environmental Impact Statement (EIS) and biological assessment to share their expertise.
- Upfront communications are needed to improve awareness about the permitting process.
- Agencies should develop and adhere to clear permitting timelines and provide regular updates to applicants about the status of permit.
- Agencies should create an open-access library of past permit applications, consultations, and associated documents as a resource for new applicants (NROC would be the ideal repository).
- A workshop is needed to increase understanding about interactions between protected species and aquaculture.
- Reduce use of jargon and acronyms in communications about the permitting process.
- Regulatory agencies are working in silos. They don't consider the cumulative burden of monitoring requirements that may be duplicative across agencies. This creates unfair economic burden on industry, especially for small experimental operators.
- Agencies should consider conducting a table top exercise for a sample aquaculture operation to identify data gaps, consider how agencies are coordinating, and identify concerns.
- Norwegian process provides model for aquaculture operations with streamlined permitting that allows operators to scale up without completely restarting the permitting process.
- Monitoring costs for offshore aquaculture should be shared between the grower and agencies to reduce unfair burden. States pay for some of the testing for nearshore aquaculture.

Fishing Industry Perspective

- Offshore aquaculture is a concern for the lobster industry which faces multiple competing uses.
- Lobster industry is not well represented in the NE Ocean Data Portal or other spatial datasets as the industry does not leave a footprint (they are everywhere).
- Lobster industry recommends that aquaculture planning be paused until Atlantic States Marine Fisheries Commission (ASMFC) can get their program up and running. This information is critical for understanding potential impact of aquaculture on lobster industry.
 - Get vessel monitoring system (VMS) data on lobster vessels
 - Characterize fishing activities
- Lobster industry also has concerns about gear conflicts.
 - How close can fishing occur near aquaculture farms?
 - Cumulative increases in offshore wind and aquaculture pose multiple challenges that will require existing uses to move.
- Protected species are also a concern. For example, areas closed to fishing to protect right whales could face risks from increased aquaculture activity.

Environmental Group Perspectives

- Aquaculture is a resource-efficient way to produce food but also presents environmental challenges.
- Although US has a significant seafood market, most aquaculture produced seafood is imported from overseas producers. This is not the most sustainable approach.
- US needs to optimize the regulatory / permitting framework for offshore aquaculture with protective, transparent and efficient regulatory structures.
- Federal and state agencies need investment to ensure they have adequate resources to coordinate an effective aquaculture regulatory process.
 - Develop agency science program that can deliver decision support tools (modeling environmental effects, spatial analytics, protected species interactions)

- Expand capacity for staffing and resources at NOAA and other permitting agencies
- Aquaculture poses environmental concerns related to benthic habitat degradation, EFH, interaction with marine wildlife (seabirds, sea turtles etc.), water quality, and impacts on other human uses depending on species, siting, and technology.
- Additional opportunities for meaningful public engagement and discussion are needed. Public notification should go beyond federal register notices. States can help increase engagement via fisheries management councils.
- AOA process appears to be an effective ocean planning process for consideration of new uses. Conducting a full programmatic EIS in advance of identifying AOA sites is preferable to more reactive, industry-driven selection of sites.

Monitoring Insights

- Aquaculture projects provide an opportunity to expand ocean monitoring. Existing projects have wealth of monitoring data that can be used for other ocean management purposes.
- Comprehensive monitoring (pre-during-post) is needed to provide information about how the project will impact the ecosystem.
- Monitoring should focus on water quality, habitat, and wildlife interactions.
- NPDES permit outlines monitoring requirements for pollutants. Additional monitoring may be included through protected species consultations by the responsible agency (e.g., acoustic monitoring to understand whale presence around aquaculture).
- Understanding baseline conditions is an ongoing challenge for NEPA.
- Bathymetry and water column monitoring are needed in advance of permitting.
- Monitoring costs are high but adequate monitoring is needed to understand the impact of this relatively new industry. Advances in science and monitoring techniques should help over time.

Suggestions for NROC

- Coordinate with permitting agencies to highlight specific aquaculture projects on the Northeast Ocean Data Portal during planning, permitting and siting.
 - Provide access to permits, consultations, and lists of stakeholders.
 - Add resources to inform applicants about the permitting process.
- NROC should provide learning opportunities related to offshore aquaculture best practices, monitoring, issues of concern, and lessons learned from other areas in the US and around the world. Potential topics:
 - Convene a working group that includes stakeholder input / host a workshop to explore the AOA process in Gulf of Mexico and Southern California and consider how to apply lessons learned in New England.
 - Opportunities and challenges of co-locating uses.
 - Understanding economic perspective and outlook for aquaculture.
 - Understanding interactions between protected species and aquaculture.
- Continue improving and refining NROC's Northeast Ocean Data Portal.
 - Expand information about fisheries activities (identify transit vs. actual fishing).
 - Enhance / expand data to address gaps to be identified by agency table top exercise.
 - Ensure data QA/QC. Update data to reflect current conditions / remove old data.
 - Improve scale of data. Finer scale data is needed to support site selection.